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Improving L2 learning: An ARCS instructional-motivational approach

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Abstract

The purpose of this study was defining the effectiveness of an instructional-motivational design, based on ARCS model (Keller, 1984), to improve Persian language learning as a second (foreign) language; A model for integrating motivation into instruction, with four categories of Attention, Relevance, Confidence & Satisfaction. For doing so a single case, multiple base-line design, an across subjects non-concurrent one has been selected. The subjects were five, Arab, male students, with the 19 years age average. Level exams showed that all of them were approximately in the same level in English skills (especially in comprehension).The subjects had before some instructions in Persian ,they were intermediate Persian learners. At the first session subjects answered to a CIS (Course Interest Survey) Keller (2010), in English and their instructional design defined according it's results & based on the ARCS model strategies. It has been designed a 46 sessions course for them. The subjects entered to the treatment (instructional design) respectively in 6th, 11th, 16th, 21th & 26th session. At the end of first to5th sessions and also 6th, 11th, 16th, 21th, 26th, 31th, 36th, 41th& 46th sessions the subjects answered to a general exam on Persian language skills. Another CIS test accomplished on the last session too which showed an improvement in motivation for the course. The comparison of each subject's baseline scores with treatment phase scores demonstrated a clear improvement in scores. Based on these findings the instructional-motivational design, based on ARCS model was effective for Persian (L2) language learning.

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Keywords: L2 learning; ARCS model; Motivation

Nomenclature

L2 : Second Language, not necessarily second one but a foreign language, not maternal language.
ARCS :Attention, Relevance, Confidence, Satisfaction
CIS: Course Interest Survey

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1. Introduction

Motivation is a key factor in learning L2, but what is motivation? Motivation is referred broadly to what people desire, what they choose to do and what they commit to do"(Keller: 2010, p.3) Motivation is defined as the process that initiates, guides and maintains goal-oriented behaviors and also as Keller(2010)believes ,explains the direction and magnitude of behavior .In other words ,it explains peoples' goals type and the amount and intensity of their activity to pursue these goals. "There are many approaches to bringing about changes in people's motivation. They range from clinical efforts to make changes in people's personalities, as in the work of Mc Celland, Alschuler, and deCharms (Alschuler, 1973;deCharms, 1976; McCelland, 1965) to change the basic motive structures of people, to design models such as those of Wlodkowski and Keller (J.M.Keller, 2008a; Wlodkowski, 1999) that focus primarily on creating learning environments that will stimulate and sustain people's desire to learn. These models can be categorized according to whether they are more person centered, environmentally centered, based upon interactions between the person and the environment, or more comprehensive as in the omnibus models that integrate motivational and instructional strategies in support of a particular type of goal-oriented learning environment (Hornberger: 2010.p.35)" (Molaee, Asadzadeh, Dortaj: 2014)

1.1 What is the ARCS Model?

But now let to know what is that ARCS model (Keller:1984) Keller (2000), says "Every educator knows the challenge of stimulating and sustaining learner motivation and the difficulty of finding reliable and valid methods for motivating learners. One approach to meeting this challenge is provided by the ARCS model of motivation (Keller:1999.a,b)"He continues the ARCS model is a result of study on research literature about motivation and also successful practices and it has been validated through multiple studies(As we show here some).The ARCS model is a model for analyzing motivational categories and then designing appropriate strategies based on this analysis .So ARCS model is both a motivational and also instructional model. As Keller: 2000,says the goal of this model is helping educators and learners to learn and have a satisfying lives.

1.2 The origins of ARCS Model

The ARCS model has been designed by John M.Keller (1979,1983).This model is based on expectancy-value theory ,which derives from Tolman theories(1932) and Lewin (1938),according that motivation is the result of satisfaction of personal needs (the value) and also the amount of their expectancy to be succeed (the expectancy). (Keller: 1989, p.2)

1.3 ARCS Model categories

The ARCS model components are four categories. It means the same Attention (A), Relevance (R), Confidence (C), Satisfaction (S).These categories describe conditions for motivating persons, each of these categories have some subcategories too. A student's Attention has to be aroused and sustained. This category also includes things that relate to curiosity and sensation seeking. As Keller: 2010, asserts it relates to questions like, How can I make this learning experience stimulating and interesting? After the student's Attention is gained a student may wonder how the given material relates to their interests and goals (Relevance). Again it is about question like that, In what ways will this learning experience can be valuable for my students? If the content is perceived to be helpful in accomplishing one's goals, then they are more likely to be motivated. Students have to know that they will probably be successful before completing a given task. They have to feel somewhat confident. Success is not guaranteed and people enjoy a challenge. However, the challenge can't be too difficult. If the outcomes of a learner's effort is consistent with their expectations and they feel relatively good about those outcomes, they will remain motivated. In other words, confidence helps the learner's believe/feel they can be succeed. The question that the instructor can ask here is, How can I help the students with my instruction to be succeeded and allow them to control their success? And finally Satisfaction, will gain with reinforcing accomplishment with rewards(internal & external one).Regarding this item, the instructor can ask himself, What can I do to help the students to have a good feelings about their course and desire to continue it?

1.4 The Study Purpose

The study main purpose was to defining the effectiveness of an instructional-motivational design, based on ARCS model (Keller: 1984), to improve Persain language learning as a second (foreign) language.

1.5 The study literature

Keller (1987), believes that in education, the motivation has been most studied as classroom control(e.g.Doyle,1985)or reinforcement of learning(e.g.Skinner,1961) or as the affective outcome of instruction(e.g.Krathwohl,Bloom,&Masia,1964);These studies does not offer any applicable strategy for the instructor. However there is a considerable literature on ARCS model efficacy in different areas, it is evident, since the model has been designed for learning improvement, through motivation and instruction improvement. It most be notified that there is some studies on ARCS and E–learning (e.g. Keller: 2008) & cyber learning (e.g.Keller:1999)too. But it seems that, there is a narrow literature on ARCS model and L2 learning, such as (Chang., Lehman:2000),which concentrates only on one of ARCS components, i.e the Relevance .It concludes that appropriately constructed CBIM(Computer based interactive multimedia) instructional material with embedded relevance enhancement can be useful for learning English as a foreign language(Chang.,Lehman:2000:p.95).In Persian only there is studies about, not for learning Persian as an L2,but mostly in medicine education.so it seems

that this is the first research about. Just as the authors asserted before in their last article, (Molaee et al:2014) the literature regarding Persian language learning as a foreign language and motivational subjects about is too limited.

2. Method

2.1. Participants

Five male subjects of a private Persian class, selected in a purposive sampling. All of the subjects were students of the same class with the same teacher, in the same place and same context, the average of their age was 19 years.

Table 1. Subjects' demographic information

	Subject 1	**Subject 2**	**Subject3**	**Subject4**	**Subject 5**
Age	18	19	19	20	19
Sex	Male	Male	Male	Male	Male

2.2. Instruments

There are two instruments regarding the ARCS model, the first is the CIS or the same *Course Interest Survey* an instrument for assessing students' reactions to instructor-led instruction. The second called the *Instructional Materials Motivation Survey* (IMMS),which has been designed to measure reactions to self-directed instructional materials(Keller:2010.p.277). Considering the aim of this research, defining the effectiveness of some motivating instructional strategies using for improving L2 learning, the instrument of CIS has been applied. Since the IMMS relates to a self-directed learning which is not relevant to our research. While the CIS can be used in a face-to-face classroom and in both synchronous and asynchronous online courses that are instructor facilitated.(ibidp.277)The CIS is a 34 items survey with approximately equal numbers for each categories of ARCS model ,it means for attention, relevance, confidence and satisfaction.(Keller:2010.p.278)The CIS internal consistency has been estimated high ,these estimates are based on Cronbach's alpha ,as you can see in the table 2(Keller:2010.p.281) .It must be notified that there is also a short version of CIS ,with only16 statements, designed by John M .Keller(2005).

Table 2. CIS Internal Consistency Estimates Reference

Scale	Reliability Estimate (Cronbach's Alpha)
Attention	0.84
Relevance	0.84
Confidence	0.81
Satisfaction	0.88
Total Score	0.95

Situational validity of CIS

The other used instruments were some general exams on Persian language learning skills: To assess dependent variant, I .e Persian language (Farsi) learningas a L2.Prepared general exams were in reading, writing, listening and speaking based on our instructional model learning goals. The speaking test scoring criteria was:

- Fluency and coherence
- Lexical resource
- Grammatical range and accuracy
- Pronunciation

The two writing questions were marked with consideration of following criteria:

- Task Achievement
- Coherence and Cohesion
- Lexical Resource
- Grammatical Range and Accuracy

The sum of each exam scores reported & registered as 20 points one.

2.3. Procedure

At the beginning of the study, it has been done some correspondence with Dr John M.Keller to prepare and get permit for using CIS and ARCS model. After sampling, the research goals, the procedure & the privacy rights have been defined for subjects and their instructor. Each subject answered to an original English CIS (2010) and the instructional design and strategies defined according it's result for each subject. Each of them had at least 20 sessions during 23 weeks, the duration of each session was 2 hours .The Study had two phases of baseline and treatment(instruction). The subjects entered to the treatment (instructional design) respectively in 6th, 11th,16th, 21th & 26th session. At the end of first to5th sessions and also 6th, 11th, 16th, 21th, 26th, 31th, 36th, 41th & 46th sessions, the subjects answered to a general exam on Persian language skills (These general exams were the same revised exam which has been used before by Molaee et al: 2014). Another CIS test accomplished on the last session too, which showed an improvement in motivation for the course.

2.4. Research design

The research design was a single case, multiple baseline design, an across subjects, non concurrent one .The treatment or instruction based on ARCS motivational strategies began for five cases after base lines of 6,11,16,21&26 sessions. Since, implementation of our instructional model, defining students interest and motivation in the course, according CIS, defining their learning level, teacher instruction to implement the appropriate strategies and the other processes of procedure required a considerable time and human energy, a single case design has been selected. Secondly the purpose of study was not reversing treatment and it seemed somehow impossible to reverse subjects to a baseline in that they have not received any instruction. Multiple baseline design is widely recognized in many areas of research (especially applied behavior analysis) as it is easily implemented, highly sensitive&

internally valid. Many areas of research in which randomized group designs& reversal single case designs are disqualified by practical or ethical considerations are easily investigable with multiple base line designs.(Huitema:2011.as cited in Molaee et al,2014).It must be notified, three main forms of multiple baseline designs are multiple baseline across behaviors , multiple baseline across subjects ,multiple baselines across setting. Indeed the multiple baseline design across subjects is not a single case design, because it contains at least two persons. Huitema (2011)says single case study across subject appropriately must be labeled as a very small design .He continues this variant is basically a combination of some AB designs, but with a unique feature of regarding the timing of condition changes that results in a high internal validity .”Instead of introducing the intervention to all subjects at the same time, the intervention is introduced at a different time to each subject according to a planned staggered sequence. The staggered initiation of the intervention makes it implausible that an event unrelated to the intervention is the cause of the apparent effect on each subject ”Huitema (2011) pp.453-4.Single case or single subject designs are designs which can be applied in the cases of samples of one subject or some individuals as a group .In these designs each subject acts as her/his own control, similar to time-series design. The participant is exposed to a baseline (non-treatment) and also a treatment phase with multiple data points.(Gay&Airasian.2003,p383).”The baseline refers to a period of time in which the target behavior(dependent variable)is observed and recorded as it occurs without a special or new intervention”.(James H. McMillan:(2004)pp227-228)This baseline provides a base for comparing results of treatment.

3. Results

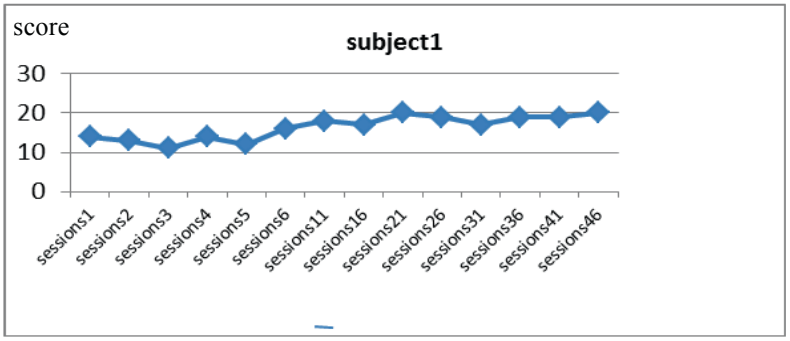
The results of 14 exams are presented here, in table 3 and also in visual graphs of figure 1.As one can find from these results ,all of subjects’ scores had an evident improvement; Each subject presented an obvious improvement in the instruction phase scores mean comparing to the baseline phase .Subject 1,2,3,4&5 respectively had an improvement in their scores mean from 12.8 to 18.33,from 14 to 18.12,from 12 to 17,from 14.25 to 18.66 & finally from 15.55 to 18.6. The improvement for case 1 was 5.53 scores, for case 2,3,4 and 5 respectively were: 4.12, 5, 3.91, 3.05.

Table 3.General exams results

	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Scores of session 1	14	15	12	14	16
Scores of session 2	13	12	12	16	15
Scores of session 3	11	13	12	13	16
Scores of session 4	14	14	13	13	15
Scores of session 5	12	15	12	15	14
Scores of session 6	16	15	12	13	15
Scores of session 11	18	15	11	14	16
Scores of session 16	17	15	14	16	17
Scores of session 21	20	16	15	15	16
Scores of session 26	19	19	17	16	18
Scores of session 31	17	20	17	18	18
Scores of session 36	19	20	19	19	19
Scores of session 41	19	20	18	18	20
Scores of session 46	20	20	19	18	18

Hence the subject 1 who had the most sessions under treatment, had the most improvement in his scores. In the other hand the subject 5 who had the least treatment sessions showed the least improvement too. Then the results showed an increase in Persian learning as measured through 14 exams. The study results are similar to those reported by Chang &Lehman(2002),for improving learning L2,via ARCS model.

This study adds to the growing body of literature supporting the efficacy of ARCS model to improve learning ,in it's general meaning.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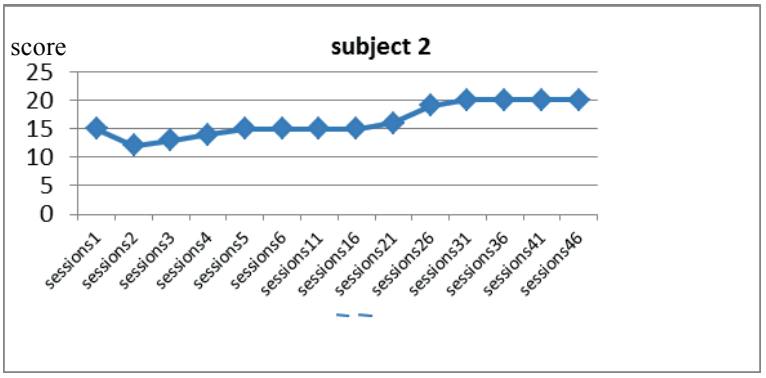
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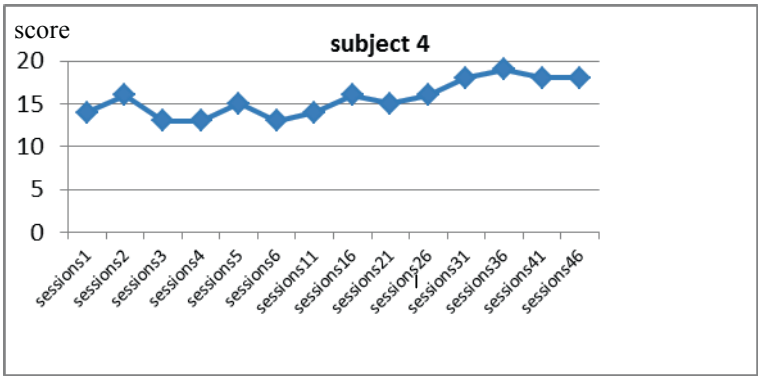
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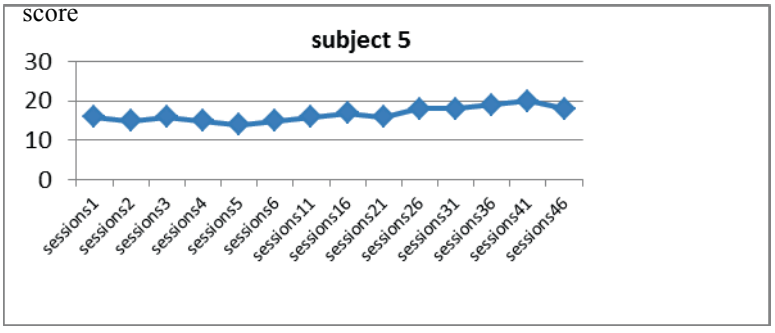
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Fig. Resuls

4.Discussion

The impact of motivation in all human activities just like L2 learning is evident. Today motivation is a key factor to learn L2, not only aptitude or intelligence. As the authors affirmed before in their article (Molaee et al:2014) despite of the importance of the subject ,there is a restrict literature about motivation in learning Persian as a foreign language.

Indeed the most literature is concentrated on English as L2 or Persian language as L2 in native bilingual Persian learners. The present study tried to raise questions about the Persian language learning and motivating, as a foreign language and bring up new ideas for future studies on. The used instructional-motivational design which based on ARCS model, in some ways is a privileged one, which integrates the instruction into motivation. In the ARCS model has been considered instruments like CIS which can describe the attitude of student toward his present course, class or lesson; So it can be a useful criterion for defining proper strategies for instructor helping to raise students' motivation. In this way the other advantage of this model is that enters the instructor in the motivating process. However the study is not allowed to conclude the evident impact of instructed model on Persian language, but it can be considerable the impact in the present study .The results of present study confirms the authors previous study about (Molaee et al: 2014) somehow, since the categories of relevance and satisfaction are parallel to the model based on Robert C. Gardner's motivational approaches. It is suggested to do this study on female cases, and also on cases with different nationalities, and even on learning languages other than Persian. Another suggestion for future studies is doing similar studies with multiple cases to make possible generalization of conclusions .It can be useful, considering varieties such as L2 learners differences in their maternal language alphabets, orthography, religion, demographic details etc.

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